

WHAT IS CLAIMED IS:

1. A continuous on-line carbon analyzer for water applications, the analyzer comprising:

- a sample inlet to receive a continuous stream of sample specimen;
- a gas inlet to receive a continuous stream of gas that is substantially free of carbon dioxide;
- a sample stream flow controller coupled to the sample stream and adapted to control sample flow therethrough;
- a gas flow controller coupled to the gas stream and adapted to control gas flow therethrough;
- a combustion furnace coupled to the sample stream flow controller and the gas flow controller to receive continuous flow of sample stream and gas, the combustion furnace being maintained at a temperature in excess of approximately 680°C;
- a chiller coupled to the combustion furnace to receive the oxidized material and condense water and particulate matter from the heated materials; and
- a detector coupled to the chiller to receive a continuous flow of carbon dioxide and provide an output

indicative of a relative amount of carbon dioxide flowing therethrough.

2. The analyzer of claim 1 and further comprising a catalyst disposed in the combustion chamber.

3. The analyzer of claim 2 wherein the catalyst is a platinum-based catalyst.

4. The analyzer of claim 1 wherein the sample flow controller is a metering pump.

5. The analyzer of claim 4 wherein the metering pump provides a sample flow in the range of approximately 0.5 cc per minute to approximately 2.0 cc per minute.

6. The analyzer of claim 5 wherein the sample flow is approximately 0.5 cc per minute.

7. The analyzer of claim 1 wherein the chiller is a thermoelectric chiller.

8. The analyzer of claim 1 wherein the detector is a non-dispersive infrared detector.

9. The analyzer of claim 8 wherein the non-dispersive infrared detector provides an output

corresponding to carbon dioxide quantity in the zero to 100 parts per million range.

10. The analyzer of claim 1 wherein the output is indicative of total carbon in the sample stream.

11. The analyzer of claim 1 wherein the output is indicative of the total organic carbon in the sample stream.

12. A method of continuously analyzing carbon content in water, the method comprising:

continuously receiving a sample specimen  
and providing the sample specimen at a  
pre-selected flow rate;

receiving carbon dioxide-free gas at a pre-  
selected flow rate;

conveying the sample stream and gas through  
a combustion furnace to oxidize the  
sample stream; and

measuring a quantity of carbon dioxide  
generated by the combustion furnace.

13. The method of claim 12 and further comprising cooling the oxidized sample stream prior to the step of measuring carbon dioxide quantity.

14. The method of claim 13 wherein the carbon dioxide output is indicative of total carbon in the sample stream.

15. The method of claim 12 wherein the output is indicative of total organic carbon in each sample stream.